

## SEQUENCE LISTING

<110> FLINDERS TECHNOLOGIES PTY. LTD.

<120> A METHOD FOR PRODUCTIVITY IMPROVEMENT AND AGENTS USEFUL FOR SAME

<130> 12469560/TDO

<150> 60/485,241

<151> 2003-07-07

<160> 33

<170> PatentIn version 3.1

<210> 1

<211> 1158

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(1155)

<223> "n" is unknown nucleotide

<400> 1

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cggatacaac catttctcnc atgggatggt ggtggaaant ttttncgggtt ggggatgggc	180
tcgcgggccta tcaccttggt ggtgggggtga tggcctacca aggcgacgaa cggtagcccg	240
cctgagaggg cgaccggcca cactgggact gagacaccgc ccgaactcct acgggaggca	300
gcaactgggga atattgccca tgggcggaag cctgacgcag ngacgccgcg tgggggatga	360
cggccttngg gttgtaaacc tntttcagca gggacgaagt tgacgtgtac ctgtagaaga	420
agcgccggct aaatangtgc cagcagccgc ggtaatangt agggcgcgag cgttntccgg	480

- 2 -

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aattattggg cgtaaagagt ttgtaggtgg cttgttgogt ttgccgtgaa agcccgtggc      540
ttaantacgg gtttgcggtg gatacgggca ggctagaggc tggtaggggc aagcggaatt      600
cctgggtgtag cggtgaaatg cgcagatata aggaggaaca ccggtggcga aggcggcttg      660
ctggggccagt tctgacggtg aggagcgaaa gcgtggggag cgaacaggat tagataccct      720
ggtagtccac gctgtaaacg ttgggcgcta ggtgtggggg tcttccacga tctctgtgcc      780
gtagctaacg cattaagcgc cccgcctggg gagtacggcc gcaaggctaa aactcaaagg      840
aattgacggg ggcccgcaca agcggcggag catgttgctt aattcgacgc aacgcgaaga      900
accttaccaa ggtttgacat acaccggaaa cactcanana tgggtgcctc ctttggaactg      960
gtgtacaggt ggtgcatggc tgtcnncacc ctogtgtcgt nagatgtngg gttaagtccc     1020
gcaacgancg caacccttgg ttccatgttg ccagcaencc ctttgnggtg gtggggacnc     1080
atggganaat gccggggtcn actcnggagg aaggtgggga tgacgtcaag tnatcntgcc     1140
ccttatgttc ttgnngtg                                     1158

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&lt;210&gt; 2

&lt;211&gt; 1437

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1437)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 2

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gctggcgggc tgcttaacac atgcaagtcg aacgatgaac cacttcggtg gggattagt      60
gcgaacgggt gagtaacacg tgggcaatct gcccttcact ctgggacaag ccctggaaac     120
ggggtctaata accggataac actnctgctc tcatgggcag gggttaaaag ctccggcggt     180
gaaggatgag cccgcggcct atcagcttgt tggtagagta atggctcacc aaggcgacga     240
cgggtagccg gcctgagagg gcgaccggcc acactgggac tgagacacgg ccagactcc      300
tacgggaggc agcagtgggg aatattgcaa caatgggcga aagcctgatg cagcgacgcc     360
gcgtgaggga tgacggcctt cgggttgtaa acctctttca gcagggaaga agcgaaagt      420
acggtacctg cagaagaagc gccggctaac tacgtgccag cagccgcggt aatacgtagg     480
gcgcaagcgt tgtccggaat tattgggcgt aaagagcttg taggcggctt gtcacgtcgg     540

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- 3 -

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gtgtgaaagc ccgggggetta accccgggtc tgcattcgat acggggctagc tagagtgtgg      600
taggggagat cggaattcct ggtgtagcgg tgaaatgcgc agatatcagg aggaacaccg      660
gtggcgagg cgcatctctg ggccattact gacgctgagg agcgaaagcg tggggagcga      720
acaggattag ataccctggt agtccacgcc gtaaacggtg ggaactaggt gttggcgaca      780
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ttcgacgcaa cgcgaagaac cttaccaagg cttgacatac accggaaagc atcagagatg      960
gtgccccctt tgtggttcgg tgtacaggtg gtgcatggct gtcgtcagct cgtgtcgtga     1020
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cggggtgatg gggactcaca ggagaccgcc ggggtcaact cggaggaagg tggggacgac     1140
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tctgcaactc gaccccatga agtcggagtt gctaataatc gcanatcagc attgctgcgg     1320
tgaatacgtt cccgggcctt gtacacaccg cccgtcacgt cacgaaagtc ggtaacaccc     1380
gaagccggtg gccaaaccct tgtgggaggg agctgtcgaa ggtgggactg gcgattg      1437

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&lt;210&gt; 3

&lt;211&gt; 317

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(311)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 3

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gtaatggccc anaaaaccgc cttcgccacc ggtgttcctc ctgatatctg cgcatttcac      60
cgctacacca ggaattccna tctcccctac cacactctag ctagcccgta tcnatgcaa     120
actcgggggtt aagcccnag ctttcacatc cgacgtgaca agccgcctac aanctcttta     180
cgcccaataa ttccgganaa cgctcgcacc ctacntntta ccgcggctgc tggncgtn     240
ttagccggtg cttcttctgc aggtaccgtc actttcgctt cttccctgct naaaaaggtt     300
tacaacccta nggcggt

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- 4 -

<210> 4  
 <211> 1048  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(1043)  
 <223> "n" is unknown nucleotide

<400> 4  
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 ggtacctgca gaagaagcgc cgnctaacta cgggccagca tccgcggtaa tacgtagggc 120  
 gcaatcgttg tccggaatta ntgggcgtaa agagntcgta ggcggcttat cacgtcgggt 180  
 gtgaaagccc ggggcttaag ccccggtct gcattcgata cgggctagct agantntgnt 240  
 aggggagatc ggaattcctg gtgtagcggg gaaatgcgca gatatcagga ggaacaccgg 300  
 tggcgaaggc ggatctcttg gccattactg acgctgagga gcgaaagcgt ggggagcgaa 360  
 caggattaga taccctggta gtccacgcgc taaacggtgg gaactaggtg ttggcgacat 420  
 tccacgtcgt cggtgccgca gctaacgcat taagttcccc gcctggggag tacggccgca 480  
 aggctaaaac tcaaaggaat tgacgggggc ccgcacaagc agcggagcat gtggcttaat 540  
 tcgacgcaac gcgaagaacc ttaccaaggc ttgacataca ccggaaagca tcagagatgg 600  
 tgccccctt gtggtcggtg taacaggtgg gcattggctgt cgtcagctcg tgtcgtgaga 660  
 tgttgggtta agtcccgcaa cgagcgcaac ccttggttct gtgttgccag catgcccttc 720  
 ggggtgatgg ggactcacag gagaacgccg gggtaactc ggaggaagggt ggggacgacg 780  
 tcaagtcac atgcccccta tgtcttgggc tgcacacgtg ctacaatggc aggtaaatga 840  
 gctgcgatac cgtgaggtgg agcgaatctc aaaaaagcct gtctcanttc ggattggggg 900  
 ctgnaantcg accccatgaa agtcggagtt gctaattatc ccagatcaac attgctggcg 960  
 gtgaatacgt tcccggggcc ttggtaaaca ccgccgtca angtnaagaa agtcgggtaa 1020  
 cccccgaaan ccggtggggc aanccctc 1048

- 5 -

<210> 5  
 <211> 508  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(472)  
 <223> "n" is unknown nucleotide

<400> 5  
 ccgccttcgc caccgggtgt tcctcctgat atctgcgcgt ttcacogcta caccaggaaa 60  
 ttccnatctc ccctaccaca ctctanctan ccggtatcga atgcaaaccg ggggttaanc 120  
 cccgggcttt cacacccgac ntgacaagcc gcctacaaac tctttacgcc caataattcc 180  
 ggacaacgct tgcgccctac ntattaccgc ggctgctggc acntatttag ccggcgcttc 240  
 ttctgcaggt accgtcactt tcgcttcttc cctgctgaaa aagggtttaca acccgaaggc 300  
 cgatcatccct cacgcggcgt cgctgcatca ggctttcgcc cattgtgcaa tattccccac 360  
 tgctgcctcc cntaggaatc tgggccgtgt ctcaatccag tgtggccggt cccctctcng 420  
 gccggctacc gtcttcctt ggtnaccatt anctaccaa caactgatag gncgcgggct 480  
 catcttcacg cggaacttt caaccacc 508

<210> 6  
 <211> 1420  
 <212> DNA  
 <213> actinomycete

<400> 6  
 ggcggcgtgc ttaacacatg caagtcgaac gatgaagccc ttcgggggtgg attagtggcg 60  
 aacgggtgag taacacgtgg gcaatctgcc cttcactctg ggacaagccc tggaaacggg 120  
 gtctaatacc ggatacgatt cgggaggcat ctcttggtac tggaaagctc cggcggtgaa 180  
 ggatgagccc gcgccctatc agcttggtgt gggtaatggc ctaccaaggc gacgacgggt 240  
 agccggcctg agagggcgac cggccacact gggactgaga cacggcccag actcctacgg 300  
 gaggcagcag tggggaatat tgcacaatgg gcgaaagcct gatgcagcga cgccgcgtga 360  
 gggatgacgg ccttcggggt gtaaacctct ttcagcaggg aagaagcgag agtgacggta 420

- 6 -

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cctgcagaag aagcgccggc taactacgtg ccagcagccg cggtaatacg tagggcgcaa      480
gcggttgccg gaattattgg gcgtaaagag ctcgtaggcg gcttgtcacg tcgggtgtga      540
aagccccggg cttaaccccg ggtctgcac cgcacgggc aggctagagt gtggtagggg      600
agatcggaat tcctggtgta gcggtgaaat gcgcagatat caggaggaac accggtggcg      660
aaggcggatc tctgggccat tactgacgct gaggagcgaa agcgtgggga gccaacagga      720
ttagataccc tggtagtcca cgccgtaaac gttggaacta ggtgttggcg acattccacg      780
tcgtcgggtg cgagcctaac gcattaagtt cccgccttgg ggagtacggc cgcaaggcta      840
aaactcaaag gaattgacgg gggcccgac aagcagcgga gcatgtggct taattcgacg      900
caacgcgaag aaccttacca aggcttgaca tataccggaa agcgccagag atggtgcccc      960
ccttgtggtc ggtatacagg tgggtgatgg ctgtcgtcag ctcgtgtcgt gagatgttgg     1020
gttaagtccc gcaacgagcg caacccttgt cctgtgttgc cagcatgccc ttcgggggtga     1080
tggggactca caggagaccg ccgggggtcaa ctcggaggaa ggtggggacg acgtcaagtc     1140
atcatgcccc ttatgtcttg ggctgcacac gtgctacaat ggccggtaca aagagctgcg     1200
atgccgtgag gcggagcgaa tctcaaaaag ccggtctcag ttcggattgg ggtctgcaac     1260
tcgaccccat gaagtcggag ttgctagtaa tcgcagatca gcattgctgc ggtgaatacg     1320
ttcccgggcc ttgtacacac cgcccgtcac gtcacgaaag tcggtaacac ccgaagccgg     1380
tggcccaacc cctcggggag ggagctgtcg aaggtgggac                               1420

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&lt;210&gt; 7

&lt;211&gt; 1239

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1217)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 7

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gcttnttggg gggncnatgg cctaccaagg ngaggacggn tanccngcct gngagggaga      60
ccgnccacac tgggaatgng anacggccca gaatcctacg ggaggcagca nnggggaana     120
ttgcacaang ggcgaaagcc tgatgcagng angccgcgtg agggaagacg gcctttgggt     180
tgtaaacctn ttttagcagg gaagaagcga aagtgcgggt acctgcagaa gaagcgccgg     240

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- 7 -

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ctaantangt gccagcagcc gcgtaatan gtagggcgca agcgttgcc ggaattattg      300
ggcgtaaaga gcttgtaggc ggcttgctcan gtnggatgtg aaagcccggg gcttaacccc      360
ggggtttgcat ttgatacggg ctagctagag tgtggtaggg gagatnggaa ttcttggtgt      420
agcgggtgaaa tgcgcagata tcaggaggaa caccggtggc gaaggcggat ctctgggcca      480
ttactgacgc tgaggagcga aagcgtgggg agcgaacagg attagatacc ctggtagtcc      540
acgccgtaaa cggtgggaac taggtgttg cgacattcca cgctcgtcgt gccgcagcta      600
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gggggcccgc acaagcagcg gagcatgtgg cttaattoga cgcaacgcga agaaccttac      720
caaggcttga catataccgg aaagcatcag agatgggtgcc ccccttggtg tcggtataca      780
ggtggtgcat ggctgtcgtc agctcgtgtc gtgagatgtt gggttaagtc ccgcaacgag      840
cgcaaccctt gttctgtgtt gccagcatgc ccttcggggg gatggggact cacaggagac      900
tggcggggtc aactcggagg aaggtgggga cgacgtcaag tcatcatgcc ctttatgtct      960
tggggctgca cacgtgctac aatggccggt acaatgagct gcgatgccgc gaggcggagc     1020
gaatctcaaa aagccggtct cagttcggat tgggggtctg naactcgacc ccatgaantc     1080
ggagttgcta ataatcccaa attcancatt ggtgcggtga atacttcccg ggcttggtac     1140
acnaccgccc gtcaactcac gaaagtcggt naaacccgaa accggtgggc caacccttg      1200
tgggaaggaa ctggccnaag tgggactggc gattgggac      1239

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&lt;210&gt; 8

&lt;211&gt; 431

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(424)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 8

```

ccgccttcgc caccggtgtt cctcctgata tctgcgcatt tcaccgctac accaggaatt      60
ccnatctccc ctaccacact ctagctagcc cgtatcaaat gcaaaccggg ggttaagccc      120
cgggctttca catccnacgt gacaagccgc ctacaanctc ttacgcccataaattccgg      180
acaacgcttg cgccctaent attaccgagg ctgctggcac ntatttagcc ggcgcttctt      240

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- 8 -

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ctgcagggtac cgtcactttc gctncttccc tgctgaaana ggtttacaac ccaaaggccn      300
tcatcoctcn ccggcntcnt tgcntcnggc ttncncccat tgttcaannt tccccactgc      360
tncctcccct cggaatctgg gccgntgtct cattcccntt ntggccggtc cccctcncag      420
gccngctacc c                                                    431

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&lt;210&gt; 9

&lt;211&gt; 653

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(640)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 9

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ctcagcgtn gtaatggccc aaaaaccgcc ttcgccaccg gtgttcctcc tgatatctgc      60
gcatttcacc gctacaccag gaattccnat ctcccctacc aactctagc tagcccgat      120
cnaatgcaaa cccgggggta anccccgggc ttccacatcc nacntgacaa gccgctaca      180
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ggcacttatt tagccgggoc ttctttctgca ggtaccgtca ctttcgcttc ttccctgctn      300
aaaaaggttt acaaccnnaa ggccgtcatc cctcacgcgg cntcgctgca tcaggctttc      360
nccattgtg caatatccc cactgctgcc tcccgtagga ttctgggocg tntctcattc      420
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cccaccaaca agctnatagg ccgcgggctc atccttcacc gccggaagct ttcaaccccn      540
tccatgcggg anaaattggt ntccggtatt aaaccccggt tccagggnnt gtcccaaat      600
tgaagggggg attgnccaact ttttactcac ccgttcncn ctaatccacc acc          653

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&lt;210&gt; 10

&lt;211&gt; 1444

&lt;212&gt; DNA

&lt;213&gt; actinomycete



&lt;400&gt; 10

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acgaacgctg gcggcggtgct taacacatgc aagtcgaacg atgaagccgc ttcggtggtg      60
gattagtggc gaacgggtga gtaacacgtg ggcaatctgc ccttcactct gggacaagcc      120
ctggaaacgg ggtctaatac cggataacac tctgtcccgc atgggacggg gttgaaagct      180
ccggcggtga aggatgagcc cgcggcctat cagcttggtg gtggggtaat ggcctaccaa      240
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gaaagtgacg gtacctgcag aagaagcgcc ggctaactac gtgccagcag ccgcggtaat      480
acgtagggcg caagcgttgt ccggaattat tgggcgtaaa gagctcgtag gcggcttgct      540
acgtcggatg tgaaagcccg gggcttaacc cggggtctgc attcgatacg ggctagctag      600
agtgtggtag gggagatcgg aattcctggt gtagcgggtga aatgcgcaga tatcaggagg      660
aacaccggtg gcgaaggcgg atctctgggc cattactgac gtctgaggag cgaaagcgtg      720
gggagcgaac aggattagat accctggtag tccacgccgt aaacgttggg aactaggtgt      780
tggcgacatt ccacgtcgtc ggtgccgcag ctaacgcatt aagttccccg cctggggagt      840
acggccgcaa ggctaaaaat caaaggaatt gacggggggc cgcacaagca gcggagcatg      900
tggtttaatt cgacgcaacg cgaagaacct taccaaggct tgacatatac cggaagcat      960
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tgcccttcgg ggtgatggg actcacagga gactgccggg gtcaactcgg aggaaggtgg      1140
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attggggtct gcaactcgac cccatgaagt cggagttgct agtaatcgca gatcagcatt      1320
gctgcggtga atacgttccc gggccttgta cacaccgcc gtcacgtcac gaaagtcggt      1380
aacaccgaa gccggtggcc caacccttg gggagggagc tgtcgaagg gggactggcg      1440
attg

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- 10 -

<210> 11  
 <211> 503  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(499)  
 <223> "n" is unknown nucleotide

<400> 11  
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 cgggctttca caaccgacnt gacaagccgc ctacaanctc ttacnccca ataattccgg 180  
 acaacgcttg cgcctacnt attaccggtg ctgctggcac ntatttagcc ggcgcttctt 240  
 ctgcaggtac cgtcactttc gcttcttccc tgctgaaaaa gggttacaac ccgaaggccg 300  
 tcntccctca cgcggcgctg ctgcatcagg ctttcgcccc ttgtgcaata tccccactg 360  
 ctgcctcccg taggattctg ggccgtgtct cantcccant ntggccggtc ccctctcagg 420  
 ccgntaccc gtcgtccctt ggtgaaccnc tacctcncca acaanctgat agggcgcggtg 480  
 ctcanctgc acgccgganc ttt 503

<210> 12  
 <211> 1173  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(1144)  
 <223> "n" is unknown nucleotide

<400> 12  
 ttaanacatg caantogaac gatgaaccn gtttcggtgg tggattagtg gcgaacggtg 60  
 agtaanangt gggcaatttg ccttcatctt tggacaagcc ctggaaacgg gtttaataacc 120  
 ggataacatt ttntcccgca tgggagggg ttgaaagntc cggcggtgaa ggatgagccc 180  
 gcggcctatn agcttggttg tggggtaatg gcctacccaa gggagacggg tagccggcct 240

- 11 -

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gagagggcga ccggccacac tgggaatgag anacggccca gaatcctacg ggaggcagca      300
gtggggaata ttgcacaatg ggcgaaagcc tgatgcagcg angccgcgtg agggatgacg      360
gccttnggggt tgtaaaccctt ttnnagcagg gaagaagcga aagtgcagggt acctgcagaa      420
gaagcgccgg ctaaataagt gccagcagcc gcggtaataa gtagggcgca agcgttgtcc      480
ggaattattg ggcgtaaaga gcttgtaggc ggcttgtcan gtnggatgtg aaagcccggg      540
gnttaacccc gggtttgcac ttgatacggg ctagntagag tgtggtaggg gagatnggaa      600
ttcctgggtg agcggtgaaa tgcgcagata tcaggaggaa caccgggtggc gaaggcggat      660
ctctgggcca ttactgacgc tgaggagcga aagcgtgggg agcgaacagg attagatacc      720
ctggtagtcc acgccgtaaa cgttgggaac taggtgttgg cgacattcca cgtcgtcgggt      780
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aggaattgac gggggcccgn acaagcagcg gancatgtgg cttaattcga cgcancgcga      900
agaaccttac caaggcttga catataccgg aaagcatcag agatgggtgcc ccccttgtgg      960
tcgntataca ngtggtgcat gnctgtcgtc acctcgtgtc gtgagatgtt gggttaagtc     1020
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tcacaggana ctgnccgggg tcaactccgg angaagggtg gtgacgaagt caaggtcatc     1140
atgncccctt atgtcttggg gctgcacacg tgc                                     1173

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&lt;210&gt; 13

&lt;211&gt; 1404

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(493)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 13

```

ttcggnggtg gantagnggc gnacgggnga ccaacangng ggcaatcccc ccttcanttt      60
nggacaaccc ctggaaacgg gtntaataac cggataacan tttntccccg catggggangg     120
ggttgaaagc tccggcgggtg aaggatgagc ccgcggccta tcagcttgtt ggtggggtaa     180
tggcctacca aggcgacgac gggtagccgg cctgagaggg cgaccggcca cactgggant     240
gaganacggc ccagaatcct acgggaggca gcagtgggga atattgcaca atgggcgaaa     300

```

- 12 -

```

gcctgatgca ggcacgccgc gtgaggggatg acggccttcg ggttgtaaac ctttttcagc      360
agggagaag cgaaagtgc ggtacctgca gaagaagcgc cggctaaata ngtgccagca      420
gccgcggtaa tangtagggc gcaagcgttg tccggaatta ttgggcgtaa agagnttgta      480
ggcggcttgt cangtcggat gtgaaagccc ggggcttaac cccgggtttg cattcgatac      540
gggctagcta gagtggtgta ggggagatcg gaattcctgg tgtagcgggtg aaatgcgcag      600
atatcaggag gaacaccggt ggcgaaggcg gatctctggg ccattactga cgctgaggag      660
cgaaagcgtg gggagcgaac aggaattaga taccctggta gtccacgccg taaacgttgg      720
gaactagggtg ttggcgacat tccacgtcgt cggtgccgca gctaacgcat taagttcccc      780
gcctggggag tacggcccg c aaggctaaaa ctcaaaggaa ttgacggggg cccgcacaag      840
cagcggagca tgtggcttaa ttcgacgcaa cgcaagaac cttaccaagg cttgacatat      900
accggaaaagc atcagagatg gtgccccct tgtggtcggt atacagggtg tgcattggctg      960
tcgtcagctc gtgtcgtgag atgttgggtt aagtcccgca acgagcgcaa cccttggttc     1020
tgtgttggcc agcatgccct tcggggtgat ggggactcac aggagactgg ccgggggtcaa     1080
ctcggaggaa ggtggggacg acgtcaagtc atcatgcccc ttatgtcttg gggctgcaca     1140
cgtgctacaa tggccggtac aatgagctgc gatgccgcga aggcggagcg aatctcaaaa     1200
aagccgggtct cagttcggt tgggggtctgc aactcgaccc catgaagtcg gagttgctag     1260
taatcgcaga tcagcattgc tgcggtgaat acgttcccg gcttgtaca caccgcccgt     1320
cacgtcacga aagtcggtaa caccgaagc cgggtggtcca accccttggt ggagggagct     1380
gtcgaagggtg ggactggcga ttgg                                     1404

```

&lt;210&gt; 14

&lt;211&gt; 1411

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1411)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 14

```

aacacatgca agtcgaacga tgaagccgct tcggtggtgg attagtggcg aacgggtgag      60
taacacgtgg ccaantgtgn ccgtcactat gggacgaaga ccttggaaac ggggtctaata     120

```

- 13 -

accggataac actctgtccc gcatgggacg gggttgaaag ctccggcggt gaaggatgag 180  
cccgcggcct atcagcttgt tgggtgggta atggcctacc aaggcgacga cgggtagccg 240  
gcctgagagg gcgaccggcc aactggggac tgagacacgg ccagactcc tacgggaggc 300  
agcagtgggg aatattgcac aatgggcgaa agcctgatgc agcgacgccg cgtgagggat 360  
gacggccttc gggttgtaaa cctctttcag cagggaagaa gcgaaagtga cggtagctgc 420  
agaagaagcg ccggctaact acgtgccagc agccgcggta atacgtaggg cgcaagcggt 480  
gtccggaatt attgggcgta aagagctcgt aggcggcttg tcacgtcga tgtgaaagcc 540  
cggggcttaa ccccggtct gcattcgata cgggctagct agagtgtggt aggggagatc 600  
ggaattcctg gtgtagcggg gaaatgcgca gatattcagg aggaacaccg gtggcgaagg 660  
cggatctctg ggccattact gacgctgagg agcgaaagcg tggggagcga acaggattat 720  
ataccctggt agtccacgcc gtaaacgttg ggaactaggt gttggcgaca ttccacgtcg 780  
tcggtgccgc agctaacgca ttaagttccc cgctgggga gtacggccgc aaggctaaaa 840  
ctcaaaggaa ttgacggggg ccgcacaaag cagcggagca tgtggcttaa ttcgacgcaa 900  
cgcaagaac cttaccaagg cttgacatat accggaaagc atcagagatg gtgccccct 960  
tgtggtcggg atacaggtgg tgcattggctg tcgtcanctc gtgtcgtgag atgttgggtt 1020  
aagtcccgc aagagcgcaa cccttgttct gtgttgccag catgcccttc ggggtgatgg 1080  
ggactcacag gagactgccg gggtaactc ggaggaagggt ggggacgacg tcaagtcac 1140  
atgcccctta tgtcttgggc tgcacacgtg ctacaatggc cgctacaatg acctgcgatg 1200  
ccgcgaggcg gaccgaatct caaacaagcc cgtctcattc ggattgcggg ctgcaactcc 1260  
gaccccatga agtccgactt gctagtactc gcacgtcaac attgctgcgc tgaatacgtc 1320  
ccggggcctt gtacacaccg ccgctcacgt cagcaaagtc ggtaacaccc gaagccgggtg 1380  
gnccaacccc ttgtgggagg gagctgtcga a 1411

&lt;210&gt; 15

&lt;211&gt; 562

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt; .

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(547)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 15

```

ccgccttcgc caccggtggt cctcctgata tctgcgcatt tcaccgctac accaggaatt      60
ccnatctccc ctaccacact ctagctancc cgtatcnaat gcaaaccggt ggtaaccgc      120
cgggctttca caccnacnt nacaanccgc ctacaaactc tttagccca ataattccgg      180
acaacgcttg cgccctactt attaccggtg ctgctggcac ttatttagcc ggcgcttctt      240
ctgcaggtag cgtcactttc gcttcttccc tgctgaaaaa ggtttacaac ccgaaggcng      300
tcacccctca cgccggtctg ctgcatcagg ctttcgcccc ttgtgcaata ttccccactg      360
ctgcctcccg tagnantctg ggccgtntct cantcccggt gtggnccgtc gccctctcag      420
gccggtacc cgtcgtcncc tnggtnaacc attanntcac caacaagctg ataggccggt      480
ggctcatcct tcaccgcccg agcttttaac ccctgccccat gaaaacagan gtnttatccg      540
gtattanaac ccgtttccag gg                                          562

```

&lt;210&gt; 16

&lt;211&gt; 1390

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1362)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 16

```

atgcaagtgc agcggaaagg cccttcgggg tactcgagcg gcgaacgggt gagtaacacg      60
tgagttaatc tgccccaggc tctggatacc caccggaaaa cggtgattaa taccgaatac      120
gacaaccgat ttgcatgata tgggtggtgna aagtttttcg gcctgggatg tgcttcgcgg      180
cctatcagct tgttggtgag gtaatggctc acccaaggct tcgacggtag ccggcctgag      240
agggtgaccg nccacactgg gactgagaca cggcccagac tcctacggga ggcagcagtg      300
gggaatattg gacaatgggc ggaagcctga tccagcaacg ccgcgtgagg gatgacggcc      360
ttcgggttgt aaacctcttt cagcacagac gaagcgcaag tgacggtatg tgcagaagaa      420
ggaccggcca actacgtgcc agcagccggt gtaatacgtg ggggccgagc gttgtccgga      480
attattgggc gtaaagggtc cgtaggcggt ctgtcgcgtc gggagtgaac accaggtgct      540

```

```

taacacctgg cctgctttcg atacgggcag nctagaggta cncaggggag aatggaattc      600
ctggtgtage ggtgaaatgc gcagatatca ggaggaaaca ccggtggcga agncggttct      660
ctgggagtat cctgacgctg aggagcgaaa gtgtggggag cgaacaggat tagataccct      720
ggtagtccac accgtaaacg ttgggcgcta ggtgtgggac acattccacg tgttccgtgc      780
cgcagctaac gcattaancg ccccgcttgg ggagtacggc cgcaangcta aaactcanag      840
gaattgacgg gggcccgcac aagcggcgga gcatgcggat taattcgatg caacgcgaag      900
aaccttacct gggtttgaca tacaccgga agccgtacag atacggcccc ttttagtcgg      960
tgtacagggtg gtgcatggct gtcgtcagct cgctgtcgtg agatgttcgg gttaagtccc     1020
gcaacgagcg caaccctcgt cctatgttgc cagcaattcg gttggggact cataggagac     1080
tgccggggtc aactcggagg aaggtgggga tgacgtcaag tcatcatgcc ccttatgtcc     1140
agggcttcac gcatgctaca atggccggta caaagggtg cgatcccgtg agggtgagcg     1200
aatcccaaaa agccggtctc agttcggatt ggggtctgca actcgacccc atgaagtcgg     1260
agtcgctagt aatcgagat cagcaacgct gcggtgaata cgttcccggg ccttgtagac     1320
accgcccgtc acgtcacgaa agtcggcaac acccgaagcc antggcccaa ctcgtaagag     1380
agggagctgt                                     1390

```

<210> 17

<211> 1411

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(638)

<223> "n" is unknown nucleotide

<400> 17

```

gtgcttaaca catgcaagtc gaacgatgaa gccgcttcgg tgggtggatta gtggcgaacg      60
ggtgagtaac acgtgggcaa tctgcccttc actctgggac aagccctgga aacgggggtct     120
aataccggat aacactctgt cccgcatggg acgggggttga aagctccggc ggtgaaggat     180
gagcccgcgg cctatcagct tgttggtggg taatggccta ccaaggcgac gacgggtagc     240
cggcctgaga gggcgaccgg ccacactggg actgagacac ggcccagact cctacggggag     300
gcagcagtgg ggaatattgc acaatgggcg aaagcctgat gcagcgacgc cgcgtagagg     360

```

- 16 -

```

atgacggcct tcgggttgta aacctctttc agcaggggaag aagcgaaagt gacggtacct      420
gcagaagaag cgccgggctaa ctacgtgcca gcagccgcgg taatacgtag ggcgcaagcg      480
ttgtccggaa ttattgggcg taaagagctc gtagggcggt tgtcacgtcg gatgtgaaag      540
cccggggcctt aaccccggtt ctgcattcga tacgggctag ctagagtgtg gtaggggaga      600
tcggaattcc tgggtgtagcg gtgaaatgcg cagatatnca ggaggaacac cggtggcgaa      660
ggcggatctc tggccattac tgacgtgag gagcgaaagc gtggggagcg aacaggatta      720
gataccctgg tagtcacgc cgtaaactgtt ggggaactagg tgttggcgac attccacgtc      780
gtcgggtgccg cagctgaacg cattaagtct cccgcctggg gagtacggcc gcaaggctaa      840
aactcaaagg aattgacggg ggcccgaca agcagcggag catgtggctt aattcgacgc      900
aacgcgaaga accttaccaa ggcttgacat ataccggaaa gcatcagaga tggtgcccc      960
cttgtggtcg gtatacaggt ggtgcatggc tgtcgtcagc tcgtgtcgtg agatgttggg     1020
ttaagtcccg caacgagcgc aacccttggt ctgtgttgcc agcatgccct tcggggtgat     1080
ggggactcac aggagactgc cggggtcaac tcggaggaag gtggggacga cgtcaagtca     1140
tcatgccccct tatgtcttgg gctgcacacg tgctacaatg gccggtacaa tgagctgcga     1200
tgccgcgagg cggagcgaat ctcaaaaagc cgggtctcagt tcggattggg gtctgcaact     1260
cgaccccatg aagtcggagt tgctagtaat cgcagatcag cattgctgcg gtgaatacgt     1320
tcccgggcct tgtacacacc gccgtcacgt cacgaaagtc ggtaacaccc gaagccggtg     1380
gcccaaccgc cttgtgggag ggaactttcc a                                     1411

```

&lt;210&gt; 18

&lt;211&gt; 1370

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1) .. (1367)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 18

```

atgcaagtng aacgatgaan cöntttgggg tggattagt gcaacgggt gagtaanang      60
tgggcaattt gcccttcaat ttgggacaag ccctggaaac ggggtntaat accggataac     120
antntgtccc gcatgggacg ggggttaaaag ctccggcgggt gaaggatgag cccgcggcct     180
atnagcttgt tgggtggggtg atggcctacc aaggcgacga cgggtagccg gcctgagagg     240

```



- 17 -

```

gcgaccggcc acactgggac tgagacacgg cccagactcc tacgggaggg agcagtgggg 300
aatattgcac aatgggcgaa agcctgatgc agcgacgccg cgtgagggat gacggccttc 360
gggttgtaaa cctttttcag caggaagaa gcgaaagtga cggtaacctgc agaagaagcg 420
ccggctaaat angtgccagc agccgcggta atangtaggg cgcaagcggt gtccggaatt 480
attgggcgta aagagtttgt aggcggcttg tcacgtngga tgtgaaagcc cggggcttaa 540
ccccgggttt gcattcgata cgggctagct agagtgtggt aggggagatc ggaattcctg 600
gtgtagcggg gaaatgcgca gatatacagga ggaacaccgg tggcgaaggc ggatctctgg 660
gccattactg acngtgagga gcgaaagcgt ggggagcnaa cagnattaga taccctggta 720
gtccaagccg taaacgttgg gaactangtg ttggcgacat tccacgtcgt cnntgccgca 780
nctaacgcat taagttcccc gcctggggag tacggccgca aggctaanac tcaaaggaat 840
tgangnnggc ccgcacaagc agcggagcat gtggcttant tcnacgcanc gcgaagaacc 900
ttaccaaggt ttgcatata ccgaaaagca tcagagatgg tgccccctt gtggtcggta 960
tacaggtggt gcntggctgt cgtcagctcg tgtcgtgaca tgttggttaa gtcccgtaaa 1020
cgaggcgcaa ccottgttnt gtgtngccag catgcccttc ggggtgatgg ggactcacag 1080
gagactgccg ggggtcaactc ggaggaaggt ggggacgacg tcaagtcac atgcccctta 1140
tgtcttgggc tgcacacgtg ctacaatggc cggtaaatg agctgogatg ccgcgaggcg 1200
gagcgaatct caaaaagccg gtntcagttc ggattgggggt ctgcaactcg accccatgaa 1260
gtcggagttg ctagtaatcg cagatcagca ttgctgcggg gaatacgttc ccgggccttg 1320
tacacaccgc ccgtcacgtc acgaaagtcg gtaacaccgc aagccgntgg 1370

```

&lt;210&gt; 19

&lt;211&gt; 1162

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1156)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 19

```

gaacgatgaa gccgtttcgg tgggtggatta gtggcgaacg gtgagtaaaa gtggcaattt 60
ncccttcatt ttggacaagc cctggaaacg ggtttaanac cggataacat tntgtccgcg 120

```

- 18 -

```

atgggacggg gttgaaagnt cccggcggtg aaggatgagc ccgcggcnta tcagcttggt 180
ggtggggtaa tggcctacca aggcgacgac gggtagcccg cctgagaggg cgaccggcca 240
caactgggant gagacacggc ccagactcct acgggaggca gcagtgggga atattgcaca 300
atgggcgaaa gcctgatgca gcgacgccgc gtgagggatg acggccttcg gggtgtaaac 360
ctntttcagc agggaagaag cgaaagtac ggtacctgca gaagaagcgc cggctaaata 420
ngtgccagca gccgcggtaa tangtagggc gcaagcggtg tccggaatta ttgggcgtaa 480
agagcttgta ggcggcttgt cangtcggat gtgaaagccc ggggcttaac cccgggtttg 540
cattcgatac gggctagtta gagtgtggta ggggagatng gaattcctgg tgtagcggtg 600
aaatgcgcag atatcaggag gaacaccggt ggcgaaggcg gatctctggg ccattactga 660
cgctgaggag cgaaagcgtg gggagcnaac aggattagat accctggtag tccacgccgt 720
aaacgttggg aactaggtgt tggcgacatt ccacgtcgtc ggtgccgcag ctaacgcatt 780
aagttccccg cctggggagt acggccgcaa ggctaaaact caaaggaatt gacggggggc 840
cgcacaaagca gcggagcatg tggcttaatt cgacgcaacg cgaacaacct taccaaggct 900
tgacatatac cggaagcat canagatggt gcccccttg tggtcggtat acangtggtg 960
catggctgtc gtcagctcgt gtcgtgagat gttgggttan gtcccgcaac gagcgcnaac 1020
cttgttctgt gtcgncnagc atgcccttcg nggtgatggg gactcacang agactgncgg 1080
ggtccactcg gaggaagggt ggcacnacgt canntcatca tgccccctta tgtcttgggn 1140
ctggccacgt gcnacnatgg cc 1162

```

&lt;210&gt; 20

&lt;211&gt; 1411

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1404)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 20

```

gctggcgggc tgottaacac atgcaagtcg aacgatgaag ccgcttcggt ggtggattag 60
tggcgaacgg gtgagtaaca cgtgggcaat ctgcccttca ctctgggaca agccctggaa 120
acgggggtcta ataccggata acactctgtc ccgcatggga cgggggttgaa agctccggcg 180

```

- 19 -

```

gtgaaggatg agcccgcggc ctatcagctt gttggtgggg taatggccta ccaaggcgac      240
gacgggtagc cggcctgaga gggcgaccgg ccacactggg actgagacac ggcccagact      300
cctacgggag gcagcagtgg ggaatattgc acaatgggcg aaagcctgat gcagcgacgc      360
cgcgtagagg atgacggcct tcgggttgta aacctctttc agcagggaaag aagcgaaagt      420
gacggtacct gcagaagaag cgccggctaa ctacgtgcc a gcagccgcg taatacgtag      480
ggcgcaagcg ttgtccggaa ttattgggcg taaagagctc gtagggcggt tgtcacgtcg      540
gatgtgaaag cccgggggctt aaccccgggg ctgcattcga tacgggctag ctagagtgtg      600
gtaggggaga tcggaattcc tgggtgtagc gtgaaatgcg cagatatcag gaggaacacc      660
ggtggggaag gcggtatctct gggccattac tgacgctgag gagcgaaagc gtggggagcg      720
aacaggatta gataccctgg tagtccaagc cgtaaactgt gggaactang tgttggcgac      780
attccacgtc gtcgggtgcc cagctaacgc attaagttcc ccgtcctggg gagtacggcc      840
gcnaggctaa aactcaaagg aattgacggg ggcccgca ca agcagcgag catgtggctt      900
anttcgacgc nacgcgaaga accttnccaa ggctgacata taccggaag catcacagat      960
ggtgcccccc ttgtggtcgg tatacagggg ggtgcatggc tgttcgtcag ctcggtgtcg      1020
gagatgttgg gttaagtccc gcaaagagcg caaccgtgtt ctgtgttgcc agcatgccct      1080
tcgggggtgat ggggactcac acgagactgt cnggggtcaac tcggaggaag gtggggacga      1140
cgtcaagttc atcatgcccc ttatgtcttg ggctgcacac gngctacaat ggccggtaca      1200
atgagnnggg atgccgagc gcggagcgaa tctcaaaaag ccggtctcag ttccgattgg      1260
ggtctgcaac tgaccccatg aagtcggagt tgctagtaat cgcagatcag cattgotgcg      1320
gtgaatacgt ncccgggcct ngtagacacc acccgtcacg tcacgaaagt cggtaacacc      1380
ctaagccggt gncccaaccc cttntgggag g                                     1411

```

&lt;210&gt; 21

&lt;211&gt; 549

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(431)

&lt;223&gt; "n" is unknown nucleotide

- 20 -

<400> 21  
ccaganatcc gccttcgcca ccggtgttcc tcctgatata tgogcatttc accgctacac 60  
caggaattcc gatctcccct accacactct agctagcccg tatogaatgc agaccggggg 120  
ttaagccccg ggctttcaca tccgacgtga caagccgcct acgagctctt tacgcccatt 180  
aattccggac aacgcttgcg ccctacgtat taccggcggt gctggcacgt agttagccgg 240  
cgctttcttct gcaggtaaccg tcactttcgc ttcttccctg ctgaaagagg ttacaacccc 300  
gaaggncgtc atccctcacg cggcgctcgt gcatcagggt ttgcccatt gtgcaatatt 360  
ccccactgct gcctcccgtg ggagctctggg ncgtgttcaa tnccagtggg gggccggtcg 420  
ccctctcagg ncggctaccg tcgtcgcctt ggtaggcatt accacaacaa gctgataggc 480  
gggggtcatc cttcaacgcc ggagcttcaa acccggtccat gcgggacaag tgtatccggt 540  
attaaacccc 549

<210> 22  
<211> 672  
<212> DNA  
<213> actinomycete  
  
<220>  
<221> misc\_feature  
<222> (1)..(643)  
<223> "n" is unknown nucleotide

<400> 22  
tcagtnatgg ccagagaanga tccgncttcg ccaccgggtgt tcctcctgat atctgcgcat 60  
ttcaccgcta caccaggaat tccgatctcc cctaccacac tctaactagc ccgtatcgaa 120  
tgcagacccc gggttaagcc ccgggctttc acatccgacg tgacaagccg cctacgagct 180  
cttnacgccc aataattccg gacaacgctt gcgcctacg tattaccgcy gctgctggca 240  
cgtagttagc cggcgcttct tctgcaggta ccgtnacttt cgcttcttcc ctgctgaaag 300  
aggtttacaa cccgaaggcc gtctccctc acggggcgtc gctgcatcag gctttcgccc 360  
atngtgcant attccccact gntgnctccc gtangagtct gggccgtgtc tcagtcccag 420  
tgtggccgggt cgnctctca ggccggctac cgtcgtcgcc ttggtaggnc attaccaccc 480  
aacaagctga tangtcgngg gctcatcctt caccgncgga gntttaaccc cgtncatgcg 540  
ggacagagtg ttatccggtg ttanaccgt atncagggtg tgtcccatag tgaaggnag 600

- 21 -

atngccacgt gttatcaccg ttcgncacta atnatcanog aancggcttc atcggttcgac 660  
 ttgcatgtgt ta 672

&lt;210&gt; 23

&lt;211&gt; 678

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(648).

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 23

ctcagcgtca gtcattggcca agagatccgc ctccgccacc ggtgttcctc ctgtatatct 60  
 gcgcatttca ccgctacacc aggaattccg atctccccta ccacactcta gctagcccgt 120  
 atcgaatgca gaccgggggt taagccccgg gctttcacat ccgacgtgac aagccgccta 180  
 cgagctcttt acgcccaata attccggaca acgcttgccg cctacgtatt accgcggtg 240  
 ctggcacgta gtttagccggc gcttcttctg caggtaccgt cactttcgct tcttccctgc 300  
 tgaaagaggt ttacaacccg aaggccgtca tccctcacgc ggctcgctg catcaggctt 360  
 tcgcccattg tgcaatatcc cccactgctg cctcccgtag gactctgggc cgtgtctcag 420  
 tcccagtggt gccggctgcc ctctcaggcc ggctaccgt cgtcgccctg gtagggcatt 480  
 acccaccaac aagctgatag gccgggggt catccttcan cgcgggagct ttaaccgcgc 540  
 catgcgggac agagtgttat ccggtattaa acccgtttca gggcttgtcc canagtgaag 600  
 ggcagattgc cactgttat canccgttcg ncactaatca cancgaancg ggttcacgt 660  
 tcgacttgca tgtgttaa 678

&lt;210&gt; 24

&lt;211&gt; 688

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

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&lt;222&gt; (1)..(666)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 24

```

ggcccagana tccgncttcg ccaccggtgt tcctcctgaa tatctgcgca tttcaccgct      60
acaccaggaa ttccgatctc ccctaccaca ctctaactag cccgtatcga atgcagaccc      120
ggggttaagc cccgggcttt cacatccgac gtgacaagcc gcctacgagc tctttacgcc      180
caataattcc ggacaacgct tgcgccctac gtattaccgc ggctgctggc acgtaattag      240
ccggcgcttc ttctgcaggt accgtcactt tcgcttcttc cctgctgaaa gaggtttaca      300
acccgaaggc cgtcatccct cagcgggcgt cgctgcatca ggctttcgcc cattgtgcaa      360
tattccccac tgetgnctcc cgtangagtc tgggccgtgt ctcagtccca gtgtggccgg      420
tcgncctctc aggccggcta ccgtcgtcgc cttggtaggc cattaccca ccaacaagct      480
gatangccgn gggctcatcc ttcanctgcg gagctttcaa nccgtccat gcgggacaga      540
gtgttatccg gtattanacc ccgtntcagg gcttgtccan agtgaagggc agatngccac      600
gtgttatcac cgttcgccac taatnacanc gaaacggctt atcgtncgac tgcattgtgt      660
aacacncgca gcgttcgtcc tgagccag                                         688

```

&lt;210&gt; 25

&lt;211&gt; 702

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(658)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 25

```

ccctcagggc cagtaatggg ccagagatc cgccttcgcc accggtgttc ctctgaata      60
tctgcgcatt tcaccgctac accaggaatt ccgatctccc ctaccacact ctagctagcc      120
cgtatcgaat gcagaccggg ggttaagccc cgggctttca catccgacgt gacaagccgc      180
ctacgagctc tttacgcca ataattccgg acaacgcttg cgccctacgt attaccgcgg      240
ctgctggcac gtagttagcc ggcgttctt ctgcaggtag cgctactttc gcttcttccc      300
tgctgaaaga ggtttacaac ccgaaggccg tcatccctca cgcggcgctc ctgcatcagg      360

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```

ctttcgccca ttgtgcaata ttccccactg ctgcctcccg taggagtctg ggccgtgtct      420
cagtcccagt gtggccggtc gccctctcag gccggctanc cgtcgtcgcc ttgggtaggc      480
attanccan caacaagctg ataggncgcg ggctcatnct tcaacgccgg agctttcaan      540
cccgcccatg cgggacagag tgttatncgg tattaaaccc gtttcagggc ttgttccaga      600
gtgaagggca gattgccacg tgttatcaac cgttcggcac taatcacaac gaagcggntt      660
atcggtcgac ttgcatgtgt taacaagccg ccagcgttcg tc                          702

```

&lt;210&gt; 26

&lt;211&gt; 711

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(687)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 26

```

tcagtaatgg cccagagatc cgccttcgcc accggtgttc ctcttgata tctgcgcatt      60
tcaccgctac accaggaatt ccgatctccc ctaccacact ctagctagcc cgtatcgaat     120
gcagaccggg ggttaagccc cgggctttca catccgacgt gacaagccgc ctacgagctc     180
tttacgcccc ataattccgg acaacgcttg cgccctacgt attaccgcg cgtctggcac      240
gtagttagcc ggcgcttctt ctgcaggtag cgtcactttc gcttcttccc tgetgaaaga      300
ggtttacaac ccgaaggccg tcatccctca cgcggcgtcg ctgcatcagg ctttcgcccc      360
ttgtgcaata ttccccactg ctgcctcccg taggagtctg ggccgtgtct cagtcccagt      420
gtggccggtc gccctctcag gccggctacc cgtcgtcgcc ttggtaggcc attacccac      480
caacaagctg ataggccgcg ggctcatcct tcaccgncgg agctttaacc ccgtcccatg      540
cgggacagag tgttatccgg tattagaacc cgtttccagg gcttgtccca gagtgaaggg      600
cagattgcca cgtgttaact anccgttcgn cactaatcan caacgaagcg gcttcatcgt      660
tcgacttgca tgtgttaagc acgccgncag cgttcgtcct gagccaggat c                          711

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<210> 27  
 <211> 522  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(465)  
 <223> "n" is unknown nucleotide

<400> 27  
 tcagtatcng cccagagatc cgccttcgcc accggtgttt cctcctgata tctgcgcatt 60  
 tcaccgctac accaggaatt ccgatctccc ctaccgaact ctagcctgcc cgtatcgact 120  
 gcagacccgg ggtaagccc cgggctttca caaccgacgt gacaagccgc ctacgagctc 180  
 tttagccca ataattccgg acaacgcttg cgcctacgt attaccgagg ctgctggcac 240  
 gtagttagcc ggcgcttctt ctgcaggtag cgtaactttc gcttcttccc tgctgaaaga 300  
 ggtttataaa ccgaaggccg tcatccotca cgcggcgtag ctgcatcagg ctttcgcccc 360  
 ttgtgcaata ttccccactg gtgnetcccg tangagtctg gggcggtgtc cantccagtg 420  
 tgggcggtag cctctcaggg cggctacgt cgtagcttgg tgagncacta ctcaacaaca 480  
 gctgataggc gcggggtcat ctggaacggc ggagctttac ac 522

<210> 28  
 <211> 670  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(638)  
 <223> "n" is unknown nucleotide

<400> 28  
 tcagtaatgg cccaganatc cgncttcgcc accggtgttc ctcctgatat ctgcgcattt 60  
 caccgctaca ccaggaattc cgatctcccc taccacaact taactagccc gtatcgaatg 120  
 cagacccggg gttaagcccc gggctttcac atccgacgtg acaagccgcc tacgagctct 180  
 ttacgcccac taattccgga caacgcttgc gccctacgta ttaccgaggc tgctggcacg 240



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```

tagttagccg gcgtttcttc tgcaggtacc gtcactttcg cttcttccct gctgaaagag    300
gtttacaacc cgaaggccgt catccctcac gggcgctcgc tgcacaggc tttcgcccat    360
tgtgcaatat tccccactgc tgcttccgt angagtctgg gccgtgtctc agtcccagtg    420
tggccggtcg ccctctcagg ccggtaccg tcgtcgctt ggtaggccat taccaccaa    480
caagctgata ngncgngggc tcctcttca ccgncggagc tttcaanccc gtcccatgcg    540
ggacagagtg ttatccgta ttaaaccgt ntccagggt tgtccatagt gaagggcaga    600
ttgccaagtg ttatcancg ttcgncacta atcatcancg aagcggcttc atcggtcgac    660
tgcattgttt                                     670

```

&lt;210&gt; 29

&lt;211&gt; 676

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(666)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 29

```

tcctcagnat cagtaatggc ccagagatcc gccttcgcca ccggtgttcc tcctgatata    60
tgcgcatctc accgctacac caggaattcc gatctcccct accacactct anctagcccg    120
tatcgaatgc agaccggggg ttaagccccg ggctttcaca tccgangtga caagccgcct    180
acgagctctt tacgcccaat aattccggac aangcttgcg ccctacgtat taccgcggt    240
gctggcacgt agttagccgg cgtttcttct gcaggtaccg tcactttcgc ttcttccctg    300
ctgaaagagg tttaacaacc gaaggccgtc atccctcacn cggcgctcgt gcatcaggct    360
ttcgccatt gtgcaatatt cccactgtc gcctcccgt ggagtctggg ccgtgtctca    420
atcccantgt ggccggtcgc cctctcangc cggctaccgt cgtcgcttg taggccatta    480
ccccaccaac aagctggata ggnccggggc tcattcttca ccgccggaag ctttaanccc    540
gtccatgcgg gananagtgn atcccngtat taaaccngt ttcagggtt gtccanagtg    600
aagggngatt gcccnagtgt ttatncccc ttcgccanta atcnacaacg aaagcggntt    660
cntcgnttcg acttgc                                     676

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- 26 -

<210> 30  
 <211> 626  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(618)  
 <223> "n" is unknown nucleotide

<400> 30  
 taatggccca gaanatccgc cttegccacc ggtgttcctc ctgaatatct gcgcatttca 60  
 ccgctacacc aggaattccg atctccccta ccacactcta gctagcccgt atcgaatgca 120  
 gacccgggggt taagccccgg gctttcacat ccgacgtgac aagccgccta cgagctcttt 180  
 acgccaata attccggaca acgcttgcg cctacgtatt accgcggctg ctggcacgta 240  
 gttagccggc gcttcttctg caggtaccgt cactttcgt tcttccctgc tgaaagaggt 300  
 ttacaaccog aaggccgtca tccctcacgc ggcgtcgtg catcaggctt tcgcccattg 360  
 tgcaatatte cccactgctg cctcccgtag gagtctgggc cgtgtctcag tcccagtgtg 420  
 gcggctgccc tctcaggccg gntanccgtc gtcgccttgg tangccatta ncccaccaac 480  
 aagctgatan gccgnnggct catccttcan cgccggagct tttaaccccg tcccatgcgg 540  
 gacagagtgt tatccggtat tagatcccgt ntccagggt tgtncatagt gaagggcana 600  
 ttgccacgtg ttactcance gttcgc 626

<210> 31  
 <211> 20  
 <212> DNA  
 <213> primer

<400> 31  
 agagtttgat cmtggctcag 20

- 27 -

&lt;210&gt; 32

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; primer

&lt;400&gt; 32

ctgtttgctc cccacgcttt c

21

&lt;210&gt; 33

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; primer

&lt;400&gt; 33

tacggytacc ttgttacgac tt

22